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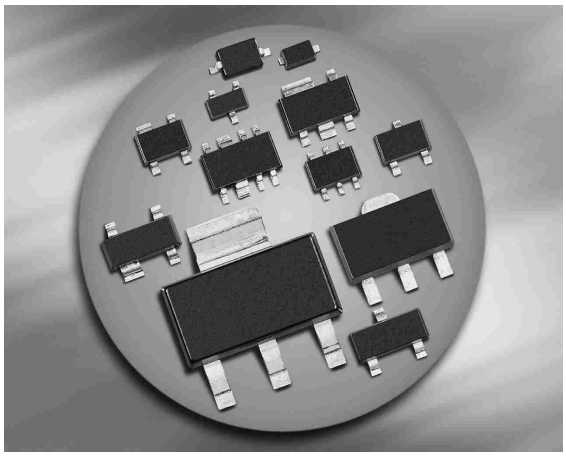
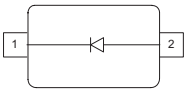
Silicon Tuning Diode

- For SAT -indoor-units
- High capacitance ratio
- Low series resistance
- Excellent uniformity and matching due to "in-line" matching assembly procedure



BB837
BB857



Type	Package	Configuration	L_S (nH)	Marking
BB837	SOD323	single	1.8	M
BB857	SCD80	single	0.6	OO

Maximum Ratings at T_A = 25°C, unless otherwise specified

Parameter	Symbol	Value	Unit
Diode reverse voltage	V_R	30	V
Peak reverse voltage $R \geq 5k\Omega$	V_{RM}	35	
Forward current	I_F	20	mA
Operating temperature range	T_{op}	-55 ... 150	°C
Storage temperature	T_{stg}	-55 ... 150	

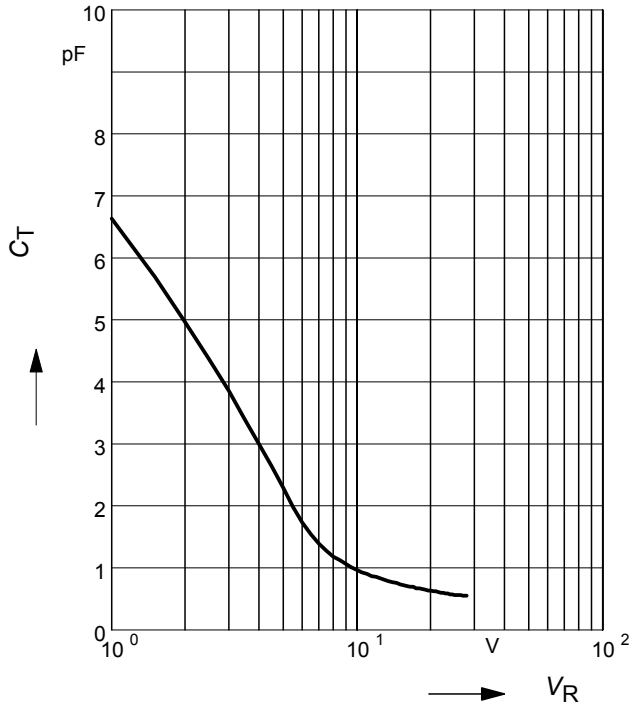
Electrical Characteristics at T_A = 25°C, unless otherwise specified

Parameter	Symbol	Values			Unit
		min.	typ.	max.	
DC Characteristics					
Reverse current	I_R				nA
V_R = 30 V		-	-	10	
V_R = 30 V, T_A = 85 °C		-	-	200	
AC Characteristics					
Diode capacitance	C_T				pF
V_R = 1 V, f = 1 MHz		6	6.6	7.2	
V_R = 25 V, f = 1 MHz		0.5	0.55	0.65	
V_R = 28 V, f = 1 MHz		0.45	0.52	-	
Capacitance ratio	C_{T1}/C_{T25}	10.2	12	-	-
V_R = 1 V, V_R = 25 V, f = 1 MHz					
Capacitance ratio	C_{T1}/C_{T28}	9.7	12.7	-	
V_R = 1 V, V_R = 28 V, f = 1 MHz					
Capacitance matching[1)]	$\Delta C_T/C_T$	-	-	5	%
V_R = 1V ... 28V, f = 1 MHz					
Series resistance	r_S	-	1.5	-	Ω
V_R = 5 V, f = 470 MHz					

[1]For details please refer to Application Note 047

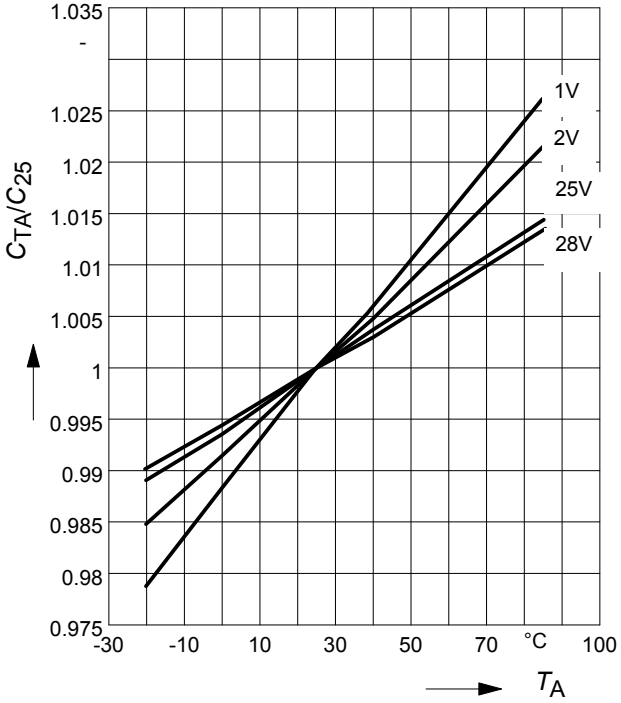
Diode capacitance $C_T = f(V_R)$

f = 1MHz



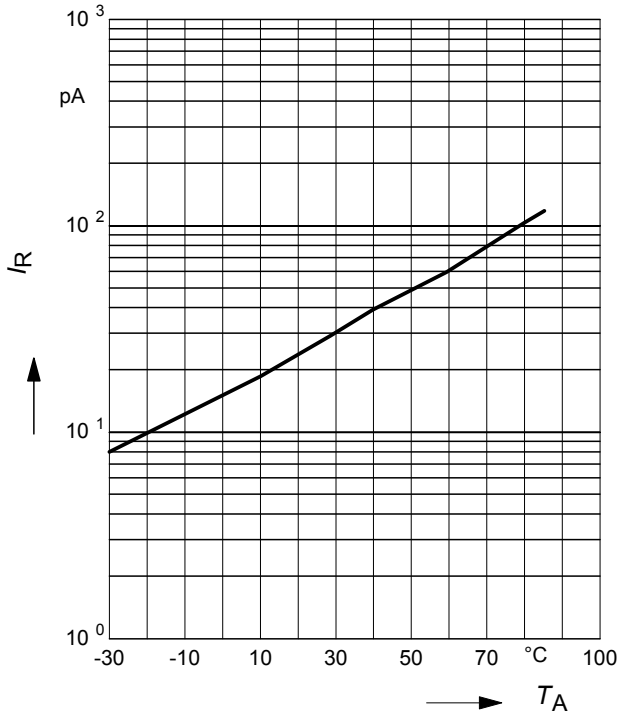
Normalized diode capacitance

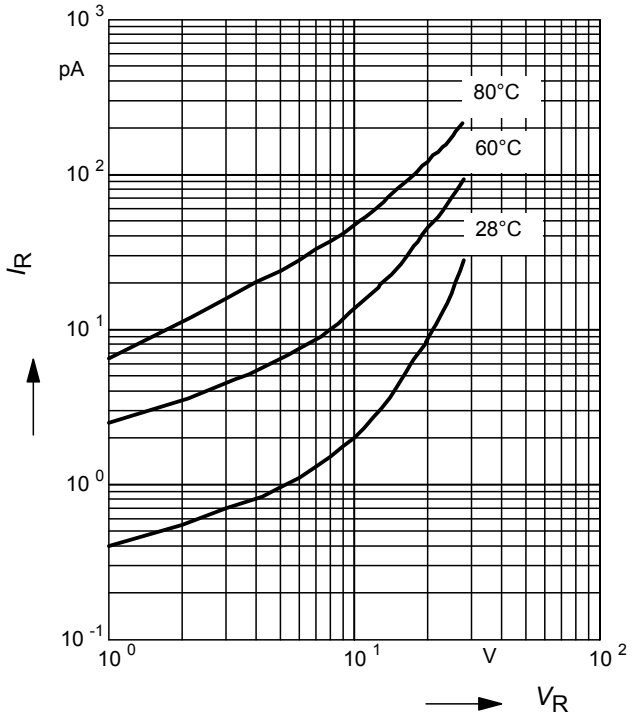
$C_{(TA)}/C_{(25°C)} = f(T_A)$; f = 1MHz



Reverse current $I_R = f(T_A)$

V_R = 28V



Reverse current $I_R = f(V_R)$

T_A = Parameter